

Serial No. 10/784,886

AUG 28 2006

Attorney Docket No. 11-226-RCE

REMARKS

Please consider the following comments. Following this response, claims 1-20 are pending. The applicant respectfully requests reconsideration and allowance of this application in view of the above amendments and the following remarks.

Claim Rejections – 35 U.S.C. § 102

The Examiner has rejected claims 10-16 and 18-20 under 35 U.S.C. § 102(e) as being allegedly anticipated by United States Published Patent Application No. 2002/0099486 to Nagao et al. ("Nagao").

Claim 10 recites a rollover determination unit performing a rollover determination as to whether or not there is a possibility that the vehicle will make a rollover, on the basis of a value of the roll angle and a value of the roll angular velocity; a side-impact determination unit performing a first side-impact determination using a value of the detected lateral acceleration to determine whether or not there is a side impact on the vehicle, and a second side-impact determination using the value of the detected lateral acceleration to determine on which lateral side of the vehicle the side impact occurs; and an activation control unit controlling activation of the occupant protective devices ... using results determined by *both* the rollover determination unit and the side-impact determination unit. Thus, the rollover determination unit of claim 10 uses results from *both* the recited rollover determination unit and the recited side-impact determination unit to further determine whether to activate the recited occupant protective devices.

In the Office Action, the Examiner asserts that Nagao discloses "an activation control unit controlling activation of the occupant protective devices, ... using results determined by *at least one of* the rollover determination unit and the side-impact determination unit. (See, e.g., Office Action, page 2, line 26, through page 3, line 3. Emphasis added.) This is not the same as

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using results determined by *both of* the rollover determination unit and the side-impact determination unit, as recited in claim 10.

The Examiner has cited the CPU 20a in Nagao as showing this feature. However, a careful examination of the CPU 20a in Nagao shows that while it performs a rollover detecting routine 500 with respect to the roll rate sensor 21 and the lateral acceleration sensor 22 (See, e.g., FIGs. 5 and 6), and performs a side-crash detecting routine 600 with respect to the right side-crash sensor 23 and the left side-crash sensor 24 (See, e.g., FIGs. 5 and 7), it does not ever activate any kind of occupant protective device based on results determined at both the roll rate sensor 21 or the lateral acceleration sensor 22, and the right or left side-crash sensors 23 or 24.

The reason for this is that Nagao discloses a system in which separate right-side impact, left-side impact, and roll-over determinations are made. And each determination independently sets how curtain bags will be deployed. In a roll-over, curtain bags on both sides of the car are inflated; in a right-side impact, (i.e., right-side crash) occurs, curtain bags on the right side of the car are inflated; and in a left-side impact, (i.e., left-side crash) occurs, curtain bags on the left side of the car are inflated deployed when a rollover occurs. But roll-over and each side impact are determined separately.

Furthermore, claim 10 requires that the side-impact determination unit perform two separate side-impact determinations. It performs a first side-impact determination using a value of the detected lateral acceleration to determine whether or not there is a side impact on the vehicle. It then performs a second side-impact determination using the value of the detected lateral acceleration to determine on which lateral side of the vehicle the side impact occurs. This can be seen by way of example in Applicants' specification from page 22, line 36, through page 24, line 20, and FIGs. 11 and 12, which describes the fourth embodiment.

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By using this process, the system of claim 10 makes its determination as to whether or not a vehicle is about to roll over based on a combination of a side impact determination using a lateral acceleration and a rollover determination mainly using a roll angular velocity (i.e., roll rate). In this way, a trip-over, for which lateral acceleration is normally larger, can be quickly detected through the side impact determination, while a rollover whose lateral acceleration is smaller is subjected to the general rollover determination. As a result, a trip-over can be more quickly and steadily distinguished from other rollovers.

Nothing in Nagao discloses or suggests a side-impact determination unit that performs these two determinations based on the output from the same acceleration detector. Thus, Nagao fails to disclose every feature recited in claim 1.

Claims 11-16 and 18-20 depend variously from claim 10 and are allowable for at least the reasons given above for claim 10.

For at least the reasons given above, Applicants respectfully request that the Examiner withdraw the rejection of claims 10-16 and 18-20 under 35 U.S.C. § 102(e) as being allegedly anticipated by United States Published Patent Application No. 2002/0099486 to Nagao.

Claim Rejections – 35 U.S.C. § 103

The Examiner has rejected claims 1-9 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Nagao in view of United States Patent No. 6,038,495 to Schiffmann (“Schiffmann”). Applicants respectfully traverse this rejection.

By this response, Applicants have amended claim 1 to recites “a rollover prediction unit predicting whether or not there is a possibility that the vehicle will make a rollover, on the basis of the predictive value of the roll angular velocity, and one of: a value of the roll angle of the vehicle and a predictive value of the roll angle to be expected after the elapse of the

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predetermined period of time." This amendment is supported, for example, by Applicants' FIGs. 1, 5, and 7, and the related text in Applicants' specification.

The Examiner relies upon Schiffmann to disclose the recited predictive angular velocity calculator, but appears to rely upon Nagao for the recited rollover prediction unit. Regardless, neither Nagao nor Schiffmann discloses or suggest predicting rollover based on both a predictive value of the roll angular velocity, and one of: a value of a roll angle or a predictive value of the roll angle.

Schiffmann simply discloses a circuit for generating a predicted roll angle ϕ_T . It does not use this value along with either a roll angle or a predictive value of the roll angle to predict whether a vehicle is rolling over or will roll over.

And as noted above, Nagao shows a system in which separate and independent right-side impact, left-side impact, and roll-over determinations are made. In Nagao, each determination independently sets how curtain bags will be deployed. The CPU 20a in Nagao never considers both a predictive value of the roll angular velocity, and one of: a value of a roll angle or a predictive value of the roll angle, as required by claim 1.

Claims 2-9 depend variously from claim 1 and are allowable for at least the reasons given above for claim 1.

Claim 3 further recites "a rollover determination unit configured to perform the determination on the basis of a relationship between a value of the roll angle and the predictive value of the roll angular velocity," while claim 6 further recites "a rollover determination unit configured to perform the determination on the basis of a relationship between the predictive value of the roll angle and the predictive value of the roll angular velocity."

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Nothing in Nagao or Schiffmann, alone or in combination discloses the use of a rollover determination unit, in addition to a rollover prediction unit, as required by claim 1. Both Nagao and Schiffmann each make a single rollover determination. Neither discloses or suggests the dual approach of making both a rollover determination and a rollover prediction.

Claims 4, 5, and 7-9 depend variously from claim 3 and are allowable for at least the reasons given above for claim 3.

For at least the reasons given above, Applicants respectfully request that the Examiner withdraw the rejection of claims 1-9 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Nagao in view Schiffmann.

Claim Amendments

By this response, the applicant has amended claims 5, 8, 14, and 16 to better recite the claimed invention. These amendments are being made solely to clarify what is recited by the claims, and not in response to an art rejection. Any narrowing amendment to the claims in the present amendment is not to be construed as a surrender of any subject matter between the original claims and the present claims; rather this is merely an attempt at providing one or more definitions of what the applicant believes to be suitable patent protection. The present claims provide the intended scope of protection that the applicant is seeking for this application. Therefore, no estoppel should be presumed, and the applicant's claims are intended to include a scope of protection under the Doctrine of Equivalents.

Allowable Subject Matter

The Examiner objected to claim 17 as being dependent upon a rejected base claim, but has indicated that they would be allowable if rewritten into independent form including all of the limitations of the base claim and any intervening claims.

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Applicants respectfully acknowledge the allowability of claim 17. However, since for the reasons above, claim 15, from which claim 17 depends, is also allowable, Applicants wish to retain claim 17 in dependent form.

Conclusion

For all the reasons advanced above, the applicant respectfully submits that pending claims 1-20, as amended are allowable.

In view of the foregoing, the applicant respectfully submits that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

Please charge any unforeseen fees that may be due to Deposit Account No. 50-1147.

Respectfully submitted,



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